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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,694	04/14/2006	Jingxin Liang	CN02 0046 US1	2387

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EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT	PAPER NUMBER
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2611

NOTIFICATION DATE	DELIVERY MODE
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08/10/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/540,694	Applicant(s) LIANG ET AL.	
	Examiner LAWRENCE B. WILLIAMS	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/27/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6, 8-11 and 13-20 is/are allowed.
- 6) ☒ Claim(s) 7 and 12 is/are rejected.
- 7) ☒ Claim(s) 2-5, 7, 8, 12, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/27/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

Specification

1. The abstract of the disclosure is objected to because lines 11-12 of page. 7 recite "umpty switches". Umpty is defined as "of an indefinite number". Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claims 2-5, 12, 14 are objected to because of the following informalities: Claims 2-5, 12, 14 all use "midable". The examiner assumes applicant meant "midamble". Appropriate correction is required.
3. Claim 7 is objected to because of the following informalities: The examiner suggests applicant define the variable, M. Appropriate correction is required.
4. Claim 8 is objected to because of the following informalities: Line 5 recites "peak amplitude of peak amplitude". This phrase is ambiguous. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the

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invention. The phrases, "in as many as M subframes" and "there can be as many as M comparison results" in lines 5-6 render the claim indefinite because it is unclear as to how many subframes are used and how many comparison results are actually performed. The examiner suggests applicant rewrite the claim to clearly and distinctly claim the invention applicant regards as the invention.

7. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 recites, "wherein said midamble (midamble) is the downlink synchronization". This phrase is ambiguous. The midamble can be used to enable downlink synchronization but cannot be the downlink synchronization. The examiner suggests applicant rewrite the claim to clearly and distinctly claim the invention applicant regards as the invention.

Allowable Subject Matter

8. Claims 1¹, 6, 9 -11, 13, 16-20 are allowed.

9. Claims 2-5, 8, 14-15 would be allowable if rewritten to overcome the claim objections cited above.

10. Claims 7, 12 would be allowable if rewritten to overcome the U.S.C. 112, second paragraph rejections and claim objections cited above.

11. The following is a statement of reasons for the indication of allowable subject matter:

The instant application discloses a method and apparatus for maintaining synchronization tracking in TDD wireless communications. A search of prior art records has failed to teach, a method or apparatus for:

dividing a midamble into two parts, then detecting a first part and a second part of the midamble, respectively;

performing an auto-correlation property operation between the two parts and a part corresponding to a local midamble, obtaining two peaks from the auto-correlation property operation;

comparing the amplitude of the two peaks; and

advancing or retarding a local timer based on a result of the comparison" (Fig. 6; pg. 2, line 21-pg. 3, line 15 (see specification amendments filed 5/27/2009)) as disclosed in claims 1 and 13 of the instant application.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Bultan et al. discloses dividing/splitting a preamble, performing a correlation on the parts of the preamble and detecting a peak in Fig. 3 of US 2005/0197160 A1 but has filing data after the filing date of the instant application.

¹ The method of claim 1 avoids the 101 issue, "tied to an apparatus" by being inherently tied to an apparatus for

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b.) Bultan et al. discloses dividing/splitting a preamble, performing a correlation on the parts of the preamble and detecting a peak in Fig. 3 of US Patent 7,006,840 but has filing data after the filing date of the instant application.

c.) Kim et al. discloses in US Patent 7,200,124 B2 using a midamble for identification and measuring a multipath loss but fails to disclose the invention as claimed in the instant application.

d.) Klank discloses using a midamble for synchronization in US Patent 6,690,658 B1 but fails to teach the invention as disclosed by the instant application.

e.) Wu et al. discloses using a midamble in two channel estimators in US Patent 6,584,150 B1 but fails to teach the invention as disclosed in the instant application.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tesfaldet Bocure/
Primary Examiner, Art Unit 2611

lbw
August 6, 2009

/Lawrence B Williams/
Examiner, Art Unit 2611